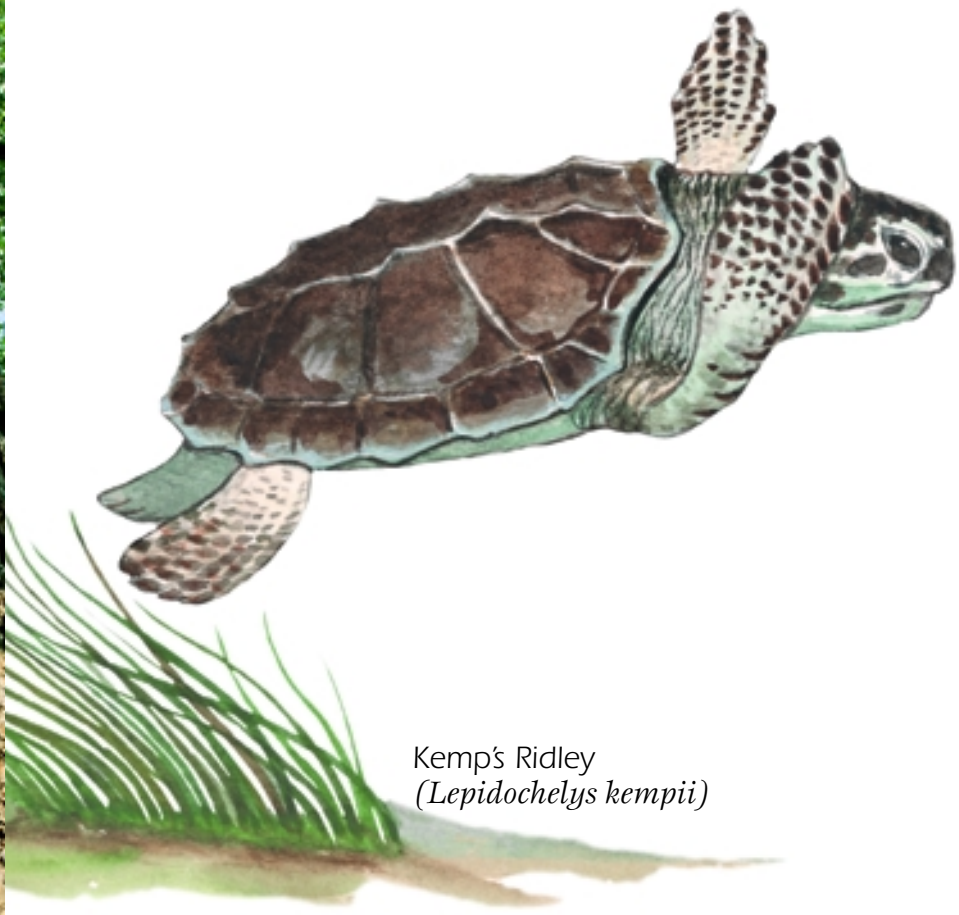
Where Sea Turtles Roam

by Carol A. Heiser and Ruth Boettcher
illustrations by Spike Knuth

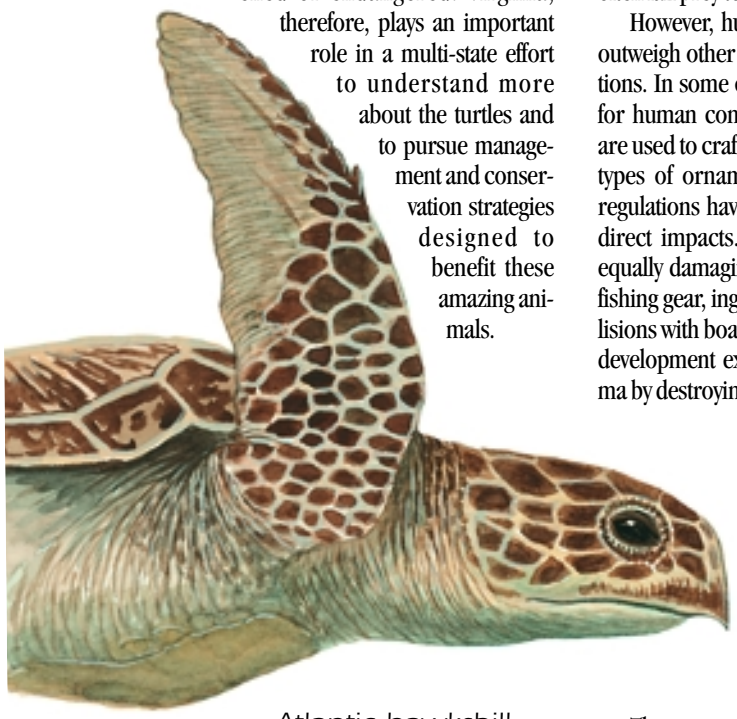


Kemp's Ridley
(Lepidochelys kempii)

Take a summer stroll along one of Virginia's quieter beaches and you are bound to find the usual bits and pieces of clam and oyster shells, strands of seaweed, and, maybe, the broken hull of a horseshoe crab that molted long ago. Swept to shore by the tides, these are the more mundane relics that hint at millions of organisms which spend their lifetime in the dark swells of the Atlantic. Occasionally, though, the casual beachcomber may stumble across a more mysterious find: the remains of a sea turtle.

Sea turtles are enigmatic creatures bound to the marine environment, which makes them difficult to observe and study. Despite continual advances in sea turtle research, basic life history questions, such as how long they live and at what age they reach sexual maturity remain unanswered. Sea turtles typically occur in Virginia's coastal waters from May to November, feeding in warm, shallow waters and occasionally nesting on ocean-facing beaches.

Five of the seven species of sea turtles that exist in the world today occur off Virginia's coast. These include the loggerhead, green turtle, Kemp's ridley, leatherback, and an infrequent hawksbill. Their status is either threatened or endangered. Virginia, therefore, plays an important role in a multi-state effort to understand more about the turtles and to pursue management and conservation strategies designed to benefit these amazing animals.



Atlantic hawksbill
(Eretmochelys imbicata)

Threats Facing Sea Turtles

It is estimated that only one out of every 5,000 sea turtle eggs fully develops into an adult animal. Sea turtles also require many years—in the decades—to ever reach reproductive maturity, which means that their population size grows very slowly. Species with a lengthy development period are very susceptible to natural and human impacts, because when too many individuals are removed from the population, the remaining animals simply do not have enough time to recoup the losses.

Sea turtles face many natural hazards. High winds and severe storms, which cause extensive beach erosion, take their toll on nests. Nests and hatchlings are also vulnerable to predators, such as raccoons, foxes, and ghost crabs. Hatchlings that make it to the water successfully often fall prey to fish and other marine life.

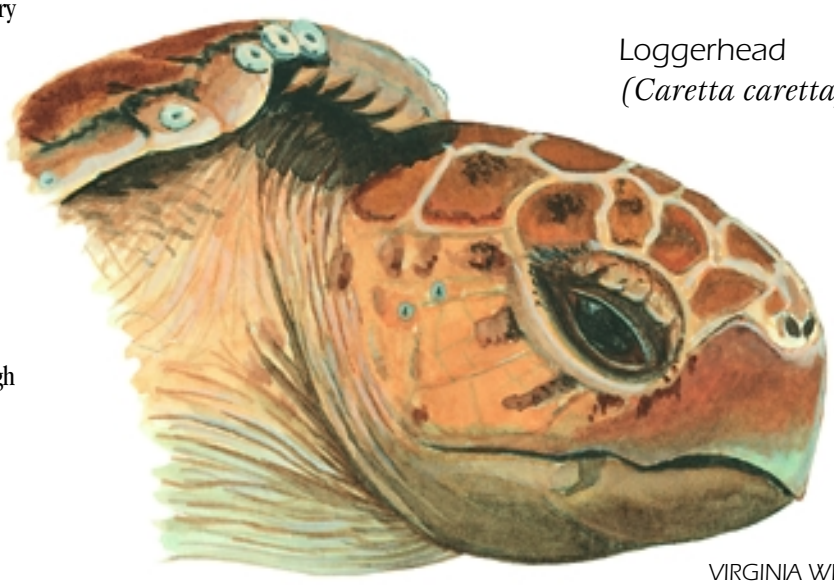
However, human impacts worldwide by far outweigh other threats facing sea turtle populations. In some cultures, eggs are still harvested for human consumption, and sea turtle shells are used to craft tortoise-shell jewelry and other types of ornamentation. Strong international regulations have helped to curb many of these direct impacts. However, indirect threats are equally damaging and include entanglement in fishing gear, ingestion of marine debris and collisions with boats. In North America, beachfront development exacerbates the sea turtle dilemma by destroying suitable nesting habitat.

The Loggerhead

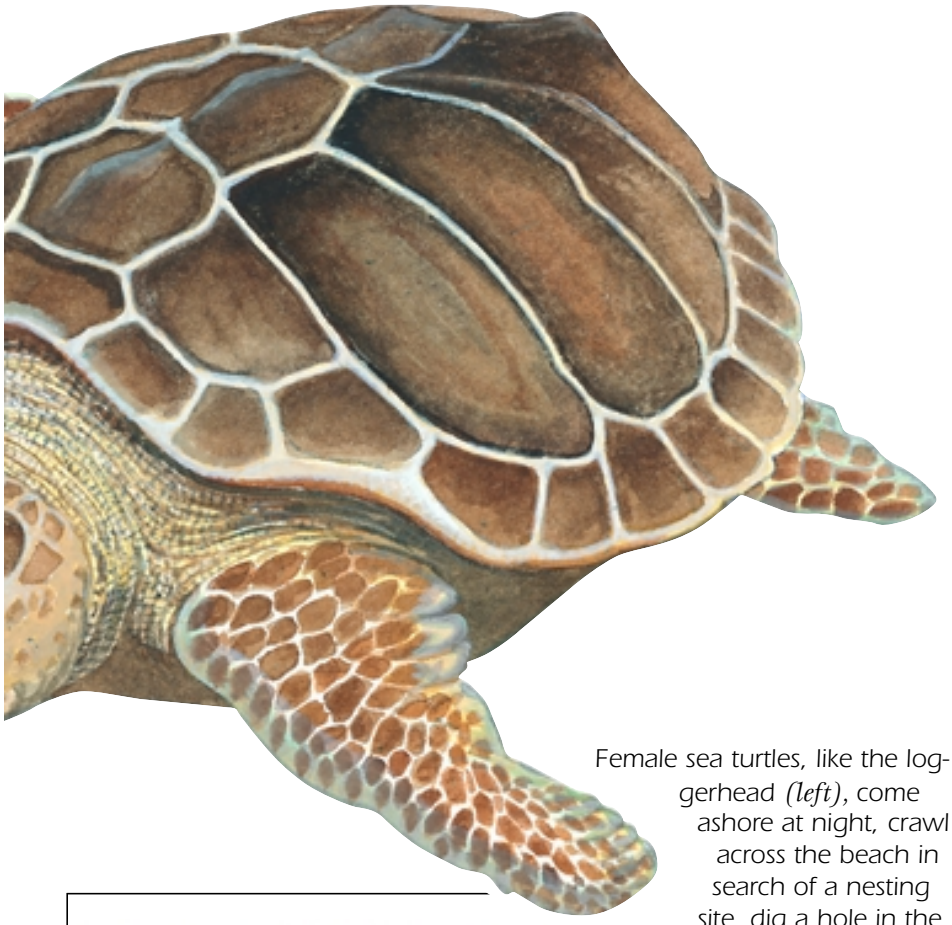
The most commonly seen sea turtle in Virginia is the loggerhead, which occasionally nests on our beaches from early June through August, primarily along the Virginia Beach oceanfront from False Cape State Park to Fort Story. Virginia is considered the northernmost limit of the loggerhead's nesting range and has had as many as eight nests reported in a single nesting season.

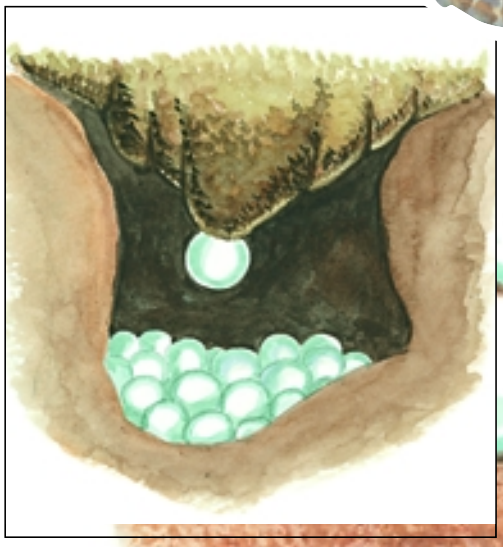
Loggerheads, so named because of their large heads and powerful jaws, are carnivores that feed mainly on invertebrates such as horseshoe crabs, blue crabs, and spider crabs. In the open sea they may feed on scallops or scavenge around fishing boats for squid, fish, and other discards. Sea turtles, in turn, are preyed on by sharks.

Sea turtles have a remarkable ability to return to the beach from which they originally hatched after spending years maturing in the open sea. A loggerhead probably does not reproduce until it is between 20 to 30 years old. Approximately every two to three years, a mature female loggerhead returns to her nesting



Loggerhead
(Caretta caretta)





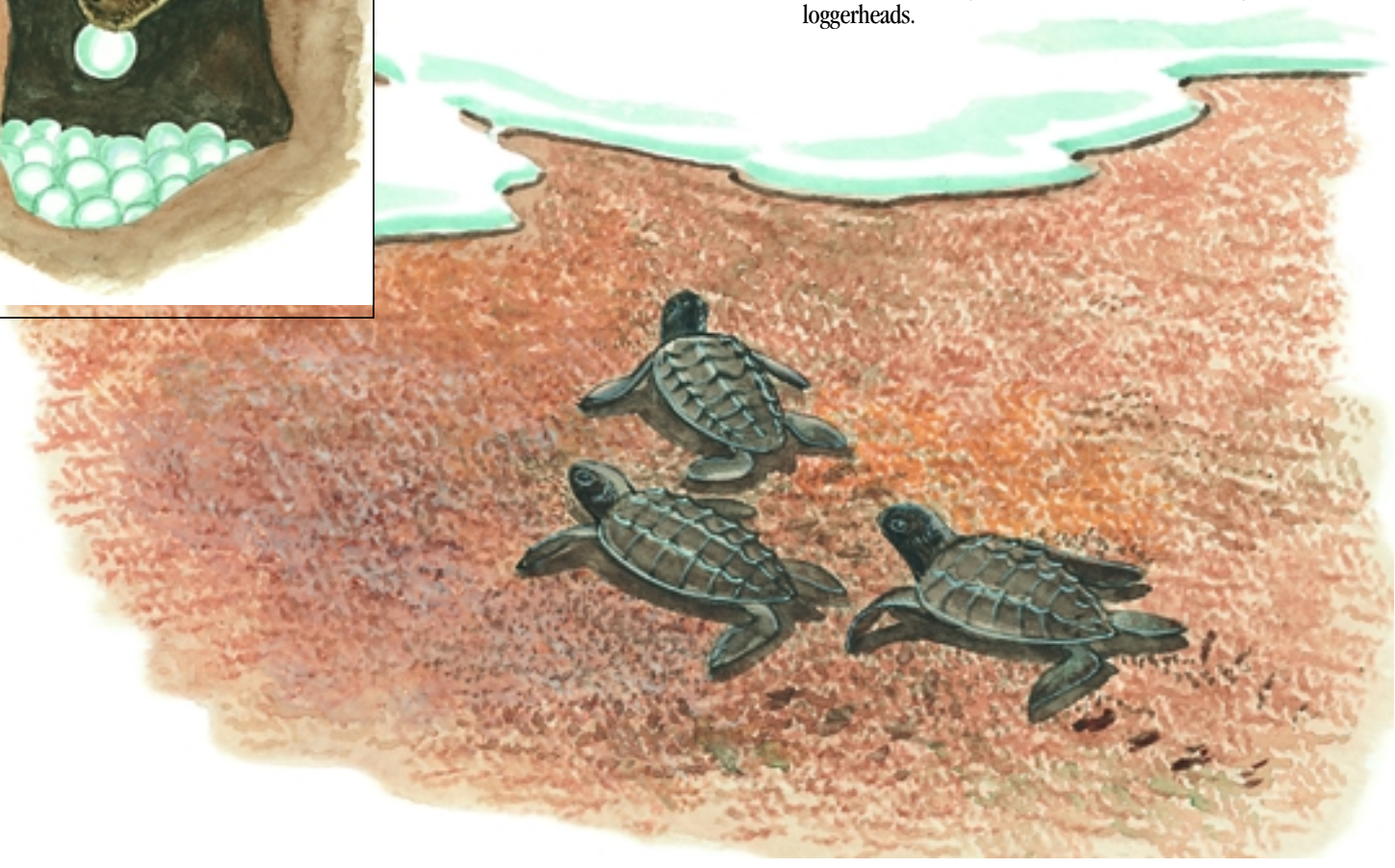
Female sea turtles, like the loggerhead *(left)*, come ashore at night, crawl across the beach in search of a nesting site, dig a hole in the sand, and lay their eggs. In little more than two months the eggs hatch, and the young turtles will head straight for open water and the ocean.

beach to lay eggs. She emerges from the ocean at night, under the protective cover of darkness, and crawls across the beach to a suitable nest site, which is usually near or at the base of a primary dune. Using her rear flippers, she digs an 18 to 24 inch deep nest cavity shaped like an upside down light bulb, and she deposits an average of 120, golf ball sized eggs. When egg laying is complete, she carefully covers the nest with sand and slowly returns to the ocean. The female will lay a similar clutch of eggs every two weeks during a single nesting season.

The eggs are left uncared for and take about 63 days to incubate in the sand. As for most other turtle species, the sex of the sea turtles developing in the eggs is determined by the temperature inside the nest cavity: warmer temperatures produce female hatchlings, and cooler temperatures produce males.

Hatchlings emerge at night and make a fast beeline across the beach to the ocean. Upon entering the water, they swim nonstop until they reach a major oceanic current such as the Gulf Stream located off the Virginia coast. There they ride the current, drifting passively amid large rafts of floating vegetation for as long as 10 years. The baby loggerheads eventually return to warm, shallow coastal waters where they continue to develop into adult turtles.

Virginia is an important summer foraging area for immature sea turtles. The lower bay estuary—a mixing bowl of fresh and salt water—and the Eastern Shore's seaside lagoon system provide valuable developmental habitat. Beds of submerged vegetation and a rich diversity of bottom-dwelling fauna afford excellent forage and cover for the developing loggerheads.



Sightings and Strandings

Sea turtles will feed on crabs, scallops, squid, fish, and even jellyfish. During the summer months, the coastline along Virginia Beach and the Eastern Shore, becomes an important feeding area for immature sea turtles.

On a very rare occasion, a lucky person walking the beach at night may encounter a nesting sea turtle, or perhaps a nest that is hatching. If so, do not crowd or disturb the turtle(s), do not shine lights or snap flash photos, and turn off all lights in the immediate area including inside lights. Removing light sources minimizes the chance that the turtles will become disoriented and move towards land instead of sea. Sit quietly away from the nesting female or hatching nest. Your eyes will quickly adjust to the darkness and allow you to enjoy the experience without harassing the animals.

On other occasions, a sightseer walking along a beach may encounter a stranded turtle. A true *stranding* is defined as either a dead or a live, debilitated sea turtle found in the water or on a shoreline, whose death or debilitation cannot be directly attributed to an interaction with a fishery, a dredging operation, or any other lawfully conducted human activity.

Every year, between 200 and 300 dead sea turtles wash ashore or strand on Virginia's shorelines. The majority of strandings occur from the latter part of May to the end of June. In 2001, an astonishing 395 sea turtle strandings were confirmed and recorded by the Virginia Sea Turtle Stranding and Salvage Network, a group administered by the Virginia Institute of Marine Science Sea Turtle Program. Researchers are increasingly concerned, because last year's total represents the highest annual number of reported strandings in the Network's 23 year existence.

The cause of death for the majority of strandings in Virginia remain unknown, although every year a number of animals are found with injuries related to boat strikes. Additionally, several turtles strand each year with ingested fishing hooks or with some type of fishing gear trailing from the animal.

Regardless of how an unfortunate turtle met its demise, it is crucial to report such sightings. When a sea turtle carcass washes up ashore, all sorts of questions beg to be answered. What species is the turtle, and from which breeding population did it originate? Does it show any evidence of injury? What physical condition was it in just prior to its death? Did it die of natural causes or for other reasons?

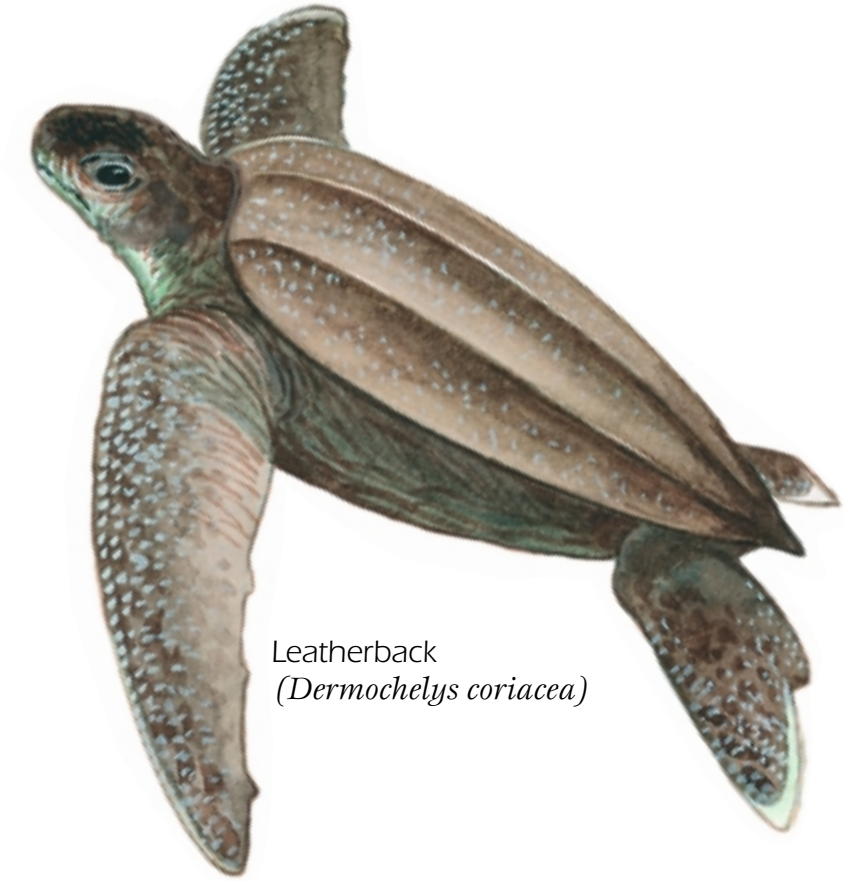
Biologists attempt to answer these types of questions each time a dead sea turtle is found, because understanding the history of the animal's last few days can provide important clues that might help in the effort to protect these species. Without such documentation, it is very difficult to get a handle on the rate of sea turtle mortality and, therefore, on the status of total numbers.

A Partnering Effort

Several agencies and organizations share sea turtle data and expertise. All actions taken to further the recovery of sea turtles are done in strict compliance with the Endangered Species Act and may only be carried out by agencies and volunteers who operate under an Endangered Species Permit.

The Virginia Department of Game and Inland Fisheries' role is to increase general awareness of sea turtles and to assist with strandings. The Virginia Marine Science Museum in Virginia Beach runs a Stranding Center that responds to strandings and takes in sick or injured turtles for rehabilitation and eventual release back to sea. The Virginia Institute of Marine Science (VIMS), in Gloucester, coordinates the Sea Turtle Stranding and Salvage Network, responds to strandings, and engages in a variety of scientific studies. Some of their research includes monitoring the distribution of turtles in state waters, examining turtle feeding ecology, and tracking tagged adults and juveniles. VIMS is also the repository for stranding data and reports these events to the National Marine Fisheries Service.

The Virginia Marine Resources Commission has an active role in sea turtle conservation as well, providing boat transportation to remote areas for Network members, and participating in the development and implementation of fishery policies that minimize the impact of state commercial fisheries on sea turtles. In addition, Back Bay National Wildlife Refuge runs the only active nest monitoring program in the state, which covers the beaches that extend from the North Carolina border to Fort Story in Virginia Beach.



Leatherback
(Dermochelys coriacea)

If You Find a Sea Turtle

If you find a dead or live, debilitated sea turtle on the western shore of the Chesapeake Bay north of the James River, call the Virginia Institute of Marine Science's Sea Turtle Program at (804) 684-7313. For all other strandings, call the Virginia Marine Science Museum at (757) 437-6159.

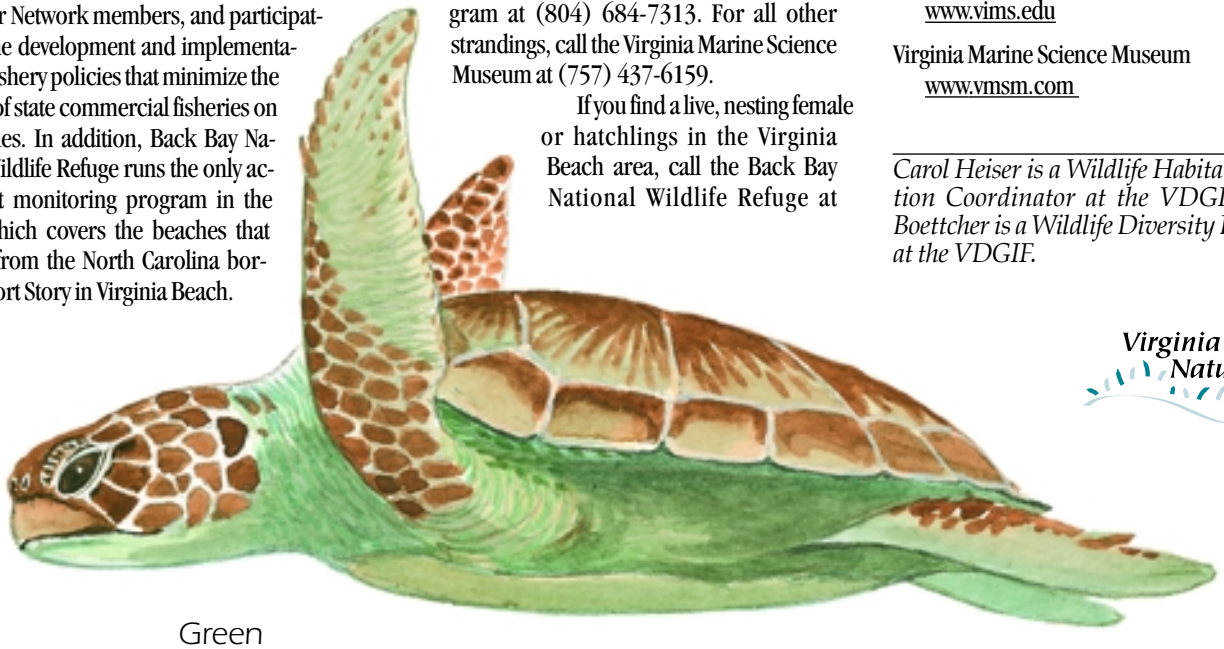
If you find a live, nesting female or hatchlings in the Virginia Beach area, call the Back Bay National Wildlife Refuge at (757) 721-2412. Sightings of nesting activity elsewhere may be reported to the Department of Game and Inland Fisheries at (757) 442-2429.

Learning More…

Virginia Institute of Marine Science
www.vims.edu

Virginia Marine Science Museum
www.vmsm.com

Carol Heiser is a Wildlife Habitat Education Coordinator at the VDGIF. Ruth Boettcher is a Wildlife Diversity Biologist at the VDGIF.



Green
(Chelonia mydas)

Virginia Naturally